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Universal Adult Hepatitis B Screening and Vaccination as the Path to Elimination

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New Centers for Disease Control and Prevention (CDC) recommendations for onetime universal screening of adults aged 18 years and older for hepatitis B virus (HBV) infection are a major step toward reducing chronic hepatitis B (CHB)–related morbidity and mortality in the US,¹ in which an estimated 1.6 million to 2.4 million people are living with CHB.² Although the burden of CHB is greatest among people born outside the US, any US resident, regardless of country of birth, socioeconomic status, or race, can be infected with HBV. In the US, the outcomes of CHB disproportionately affect Asian and Black persons; Asian people are 9 times and Black people are 2.5 times more likely to die from hepatitis B–related complications than non-Hispanic White persons.³

Universal hepatitis B screening of pregnant individuals, recommended by the Advisory Committee on Immunization Practices (ACIP) since 1988 and by the US Preventive Services Task Force (USPSTF) since 2009, has led to annual screening for hepatitis B in 85% to 90% of pregnant people in the US and has resulted in a significant decrease in perinatal CHB through prophylaxis with hepatitis B vaccine and immune globulin.⁴ Expanding the universal HBV infection screening recommendation beyond pregnant persons is consistent with the national viral hepatitis elimination strategy to increase the proportion of people living with hepatitis B who are aware of their infection to 90% by 2030, with the goal of increasing CHB care and treatment to reduce hepatitis B–related complications and deaths. A cost-effectiveness analysis supports this recommendation; the authors found onetime hepatitis B screening of adults would be highly cost-effective and would likely avert an additional 7.4 cases of compensated cirrhosis, 3.3 cases of decompensated cirrhosis, 5.5 cases of hepatocellular carcinoma, 1.9 liver transplants, and 10.3 HBV-related deaths for every 100 000 adults screened compared with current practice.⁵

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Chronic hepatitis B is a silent killer because many people living with it have no symptoms and are not aware of their infection. If such individuals' disease is not diagnosed and they do not receive care and treatment, they are at risk of premature death from cirrhosis and hepatocellular carcinoma, as well as liver failure from HBV reactivation when receiving immunosuppressive or hepatitis C therapy. Although there is no cure for CHB, most deaths can be prevented with disease monitoring; antiviral therapy to prevent and reverse liver inflammation, fibrosis, and cirrhosis; and liver imaging for hepatocellular carcinoma surveillance for early detection and treatment. Persons who are not aware they have CHB can also transmit the infection through unprotected sex and unsafe injection, as well as during pregnancy and delivery.

Risk-based screening of nonpregnant, asymptomatic adolescents and adults, including non-US-born persons from countries with hepatitis B surface antigen (HBsAg) prevalence of 2% or greater, was recommended by CDC in 2008 and the USPSTF in 2014. However, screening based on a long list of risk categories and place of birth is difficult to implement by primary care clinicians and in health care systems because such information is not typically captured as part of medical records. An estimated two-thirds of the US non-institutionalized population living with CHB are unaware of their infection, reflecting the difficulty of a risk-based screening approach.⁶

Universal screening of adults would make hepatitis screening feasible in the primary care setting by incorporating hepatitis B screening as an electronic health record health maintenance topic reminder or best practice alert for patients aged 18 years and older who have no record of HBV screening or a CHB diagnosis code. A study found that implementing birth cohort hepatitis C screening as a best practice advisory in the electronic health record led to an increase in hepatitis C screening during primary care clinicians' visits from 7.6% to 72% within a year.⁷

The new CDC guidelines specifically recommend universal hepatitis B screening of adults aged 18 years and older with a triple panel, which includes HBsAg, antibody to HBsAg, and total antibody to hepatitis B core antigen. Hepatitis B surface antigen can identify people with an active infection, antibody to HBsAg can identify people who are immune, and total antibody to hepatitis B core antigen can identify people who have a resolved infection but may be susceptible to reactivation. People with negative results for all 3 tests are susceptible to HBV infection and need vaccination. Awareness of whether the patient has resolved or active infection is crucial because many newer immune therapies for treatment of rheumatoid arthritis, psoriasis, inflammatory bowel disease, and multiple sclerosis have the potential to cause disease reactivation and liver failure (eg, certolizumab, adalimumab, ocrelizumab). The updated screening guidelines also newly recommend periodic testing for an expanded list of risk factors among persons currently or formerly incarcerated, persons with a history of hepatitis C virus infection, persons with a history of sexually transmitted infections or multiple sex partners, and anyone who requests hepatitis B testing. Every person should know their HBV status.¹

Universal hepatitis B screening of adults complements the 2022 ACIP recommendation for universal hepatitis B vaccination of adults aged 19 to 59 years (in addition to adults >59

years with risk factors for HBV infection or who request vaccination) to protect the large unvaccinated adult population from hepatitis B. Although the new ACIP recommendation does not require adults to receive prevaccination hepatitis B testing, when feasible, the triple panel can save vaccination costs by identifying adults who do not need additional vaccine doses (ie, people who test positive for HBsAg or antibody to hepatitis B core antigen).

Successful implementation of the universal adult hepatitis B screening recommendation will require effective strategies to overcome clinician-, patient-, and health system–related obstacles. Educating primary health care clinicians and patients on the benefits of screening will be a critical piece. Diagnostic laboratories could offer a CHB panel clearly distinct from the acute hepatitis panel to streamline correct ordering for screening and provide clearer interpretation for the panel results. Additionally, the Centers for Medicare & Medicaid Services could consider streamlining hepatitis B screening reimbursement by eliminating the requirement for clinicians to report hepatitis B screening with an additional *International Statistical Classification of Diseases and Related Health Problems, 10th Revision* diagnosis code for other problems related to lifestyle (Z72.59), a step that may be easily overlooked or that clinicians may be reluctant to enter. Updating the risk-based 2020 USPSTF hepatitis B screening recommendation⁸ to align with the current CDC universal screening recommendation would also be key to ensuring coverage by payers.

Paving the way, in 2022 California became the first state in the country to require clinics and facilities that provide primary care services to offer their adult patients hepatitis B screening. For persons who test positive for HBsAg in California, the clinician is required to provide or refer the patient for CHB-directed monitoring and treatment according to the American Association for the Study of Liver Diseases practice guidelines.⁹ The California Correctional Health Care Services dashboard reported in October 2022 that, using an opt-out strategy, 98% of new individuals arriving at the 34 state prisons have received hepatitis B screening with the triple panel. As further lessons are learned from this statewide practice change, they will inform future universal screening implementation efforts nationwide.

Conflict of Interest Disclosures:

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